

## A new genus and species of Aphelinidae from Greece. (Hymenoptera: Chalcidoidea)\*

by

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*Debachiella pini*, gen. et spec. nov., is described and its systematic position in the subfamily Aphelininae is discussed. It is a parasite of *Leucaspis pini* (Hartig), a diaspidid scale on pine trees in Greece.

Highly distinctive parasites obtained from samples of *Leucaspis pini* (Hartig) (Homoptera: Diaspididae) collected on pine trees in Greece appear to represent an undescribed genus of Aphelinidae. We propose the patronym *Debachiella*, in honour of the invaluable contribution made by Professor Paul DeBach to the development of biological control of arthropod pests.

### **DEBACHIELLA** gen. nov.

Type species: *Debachiella pini* spec. nov.

**FEMALE.** Head, in frontal aspect, sub-trapezoidal; fronto-vertex wider than long; ocelli widely separated, forming an obtuse triangle; antenna 6-segmented (1131); mandible tridentate, denticles small; maxillary palpus 1-segmented; labial palpus 1-segmented.

Pronotum rather long, composed of 2 broadly joined plates; scutellum wider than long, shorter than the mesoscutum; axillae extending in front of scutellum for over  $\frac{1}{2}$  their length; prepectus medially divided; mesonotal endophragma extending into gaster to third tergite. Pronotum, mesonotum sparsely setose; metanotum, propodeum glabrous. All legs with 5 tarsomeres. Fore wing lacking speculum; sub-marginal and marginal veins sub-equal in length; stigmal vein short; post-marginal vein absent; marginal fringe not exceeding  $\frac{1}{3}$  blade width. Hind-wing spatulate with long marginal fringe.

Gaster sub-sessile, sparsely setose, longer than propodeum and thorax combined; ninth and tenth tergites fused, forming a syntergum; ovipositor slightly exerted, enclosed by abdominal sternites to less than  $\frac{1}{2}$  its length, the distal part exposed.

**MALE.** Very similar to the female; genitalia with well developed elongate parameres; parameres and volsella sub-equal in length.

### Systematic Position of *Debachiella*

Various concepts of the higher classification of the Aphelinidae are currently recognized. The first modern classification was offered by De Santis (1946, 1948, 1967),

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who divided the bulk of the family into 2 main subfamilies, the Aphelininae with a distinct speculum in the fore wing and 3- to 6-segmented antennae and the Coccophaginae with an aspeculate fore wing and usually 7- to 9-segmented antennae. De Santis also recognized a third subfamily, the Calesinae, in which he included a single aberrant genus, *Cales* Howard.

Ferrière (1965) retained the Aphelininae and Coccophaginae, but grouped all the genera with 4-segmented tarsi in a separate subfamily, the Pteroptricinae, in which he placed, among others, the aphelinine genus *Eretmocerus* Haldeman as well as the calesine genus *Cales*. Ferrière also recognized the Eriaporinae as a fourth subfamily of the Aphelinidae.

Nikol'skaya and Yasnosh (1966), on the other hand, retained the Aphelininae, Calesinae and Coccophaginae, but divided the latter further to establish the subfamilies Azotinae and Prospaltellinae. They did not recognize the Pteroptricinae as a distinct group, but placed most pteroptricine genera in the Prospaltellinae and returned *Eretmocerus* to the Aphelininae. Also, they considered the Eriaporinae as an ancient group related to both the Elasmidae and Aphelinidae, rather than a bona fide member of the latter family.

The various authors are in fair agreement regarding the characterization and composition of the Aphelininae. The presence of a distinct speculum in the fore wing has been consistently regarded as the main characteristic of that subfamily.

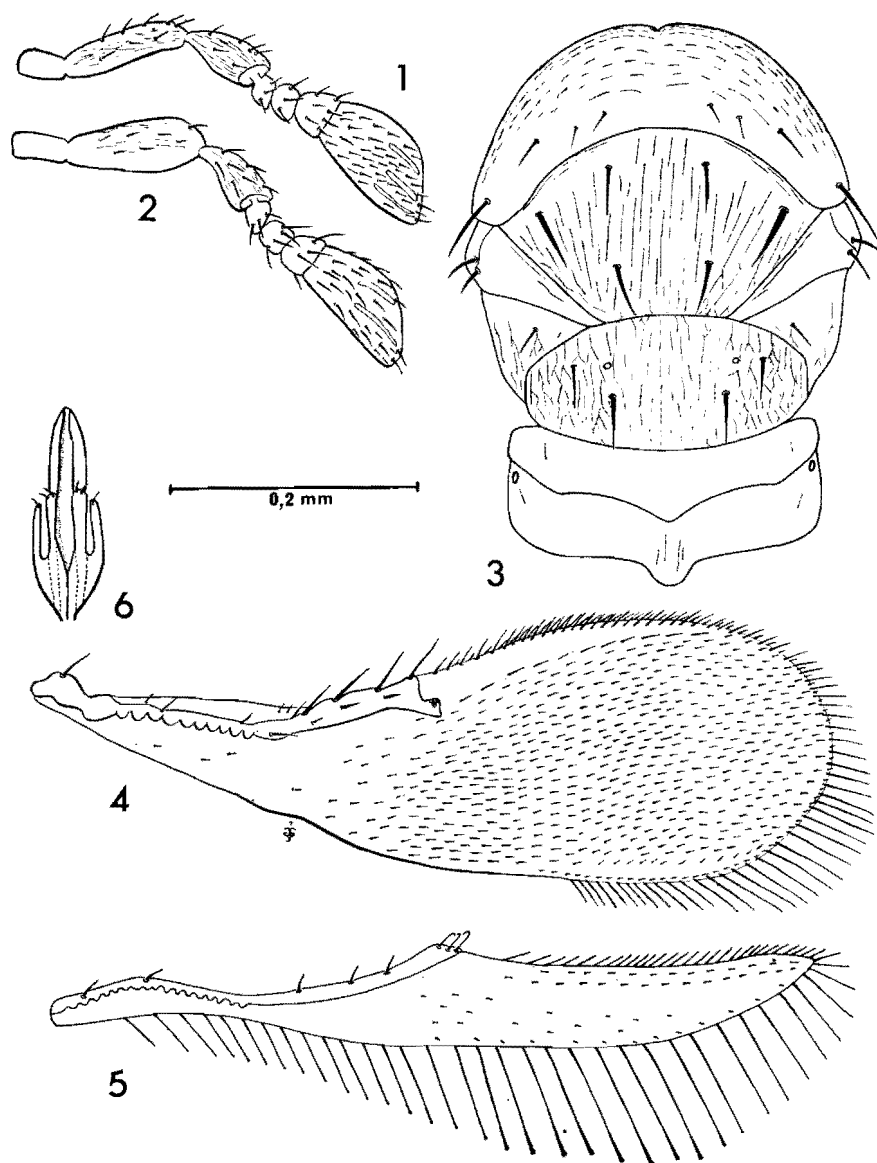
*Debachiella* gen. nov., does not fit into either classification. It resembles the Aphelininae in general habitus and in most characters, but differs markedly in the absence of a speculum. Obviously, neither classification is satisfactory, the various subfamilies not necessarily representing natural groups. However, it seems unnecessary to create another subfamily for a single known species that fails to satisfy one character. For the time being, therefore, *Debachiella* is regarded as an anomalous member of the Aphelininae.

Morphologically, *Debachiella* seems most closely related to *Centrodora* Foerster: the head in frontal aspect and general habitus are suggestive of *Centrodora*; antennae, thoracic structure and chaetotaxy patterns are similar; the structure of abdomen and ovipositor is also similar to that of *Centrodora* and *Aphytis* (see Compere, 1955); male genitalia of both *Debachiella* and *Centrodora* exhibit elongate parameres with a single apical seta, digitus with 2 spines.

All known species of *Centrodora* are egg parasites of other insects; *Debachiella* is a presumed primary parasite of armoured scale insects.

### ***Debachiella pini* spec. nov., figs. 1-6**

FEMALE. With the characters of the genus; (numbers in parenthesis refer to maximum and minimum for the type series) length 0,72-0,83 mm; colour in life entirely pale. Compound eye finely setose; fronto-vertex with numerous pale, thin setae; gena with minute setae, nearly glabrous; toruli at level of ventral margin of compound eye, separated by twice the diameter of single torulus; inter-antennal ridge weakly protuberant, marginally setose. Antennal scape (fig. 1) about  $3\frac{1}{2}$  times longer than wide ( $3\frac{3}{4}$ - $3\frac{1}{2}$ ), radicle excluded; pedicel nearly twice longer than wide ( $1\frac{3}{4}$ -2),  $\frac{3}{4}$  length of scape; first funicular segment trapezoidal, ventral aspect longer than dorsal, about as long as wide; second segment more symmetrical, a trifle shorter and wider than the first, somewhat wider than long; third funicular segment considerably longer and wider,



Figs. 1-6. *Debachiella pini* spec. nov. 1. Left antenna, female, inner aspect. 2. Left antenna, male, inner aspect. 3. Thorax and propodeum, female, dorsal aspect. 4. Right fore wing, female. 5. Right hind wing, female. 6. Male genitalia, ventral aspect.

about  $1\frac{1}{2}$  times wider than long ( $1\frac{1}{4}$ – $1\frac{1}{2}$ ); club nearly twice longer than wide ( $1\frac{1}{2}$ –2), nearly as long as the scape, over 3 times longer and nearly  $1\frac{1}{2}$  times wider than third funicular segment, bearing longitudinal sensilla (4–6).

Pronotum (fig. 3) large, arcuate, faintly striate, bearing a transverse row of 10–14 setae along posterior margin; propleura finger-like, 4 times longer than wide; mesoscutum with light longitudinal striations and 6 setae; parapsidal suture rather indistinct; scapula wedge-shaped, smooth, with 2 short setae along distal margin; axilla with faint linear striations distally, a single fine seta centrally; scutellum  $\frac{2}{3}$  median length of mesoscutum, sculptured as mesoscutum, bearing 4 setae, 2 discoid sensilla; metanotum V-shaped smooth, asetose, with a short, slender antero-median apodeme fitting beneath posterior margin of scutellum; propodeum  $1\frac{1}{2}$  times longer than metanotum ( $1\frac{1}{4}$ – $1\frac{1}{2}$ ),  $\frac{1}{2}$ – $\frac{2}{3}$  median length of scutellum, faintly striated medially and mesad of spiracles, asetose except 2 short setae in front of each spiracle, with mesal protrusion along posterior margin.

Fore wing (fig. 4) hyaline, 3 times longer than wide, venation extending to  $\frac{2}{5}$  length; sub-marginal vein bullate (14–18), sparsely setose (3–4), sub-equal in length to marginal vein; marginal vein setose (8–12); marginal fringe not exceeding  $\frac{2}{3}$  blade width; costal cell with 1 fine seta at basal  $\frac{1}{2}$ ; 1–3 coarser setae near apex; disc of wing with uniform vestiture of short setae, proximal  $\frac{1}{4}$  of wing bare. Hind wing (fig. 5) about 8–9 times longer than wide, sparsely setose; sub-marginal vein bullate, sub-equal in length to marginal vein; marginal fringe longer than blade width ( $1\frac{1}{2}$ – $1\frac{3}{4}$  times). All legs with tarsomeres sub-equal; mid-tibial spur nearly as long as the corresponding basitarsus.

Gaster ovate, laterally striate; each tergite with a row of pale thin setae (2–8); ovipositor long, only slightly shorter than hind tibia and tarsus combined; gonostylus sparsely setose, sub-equal in length to hind basitarsus and second tarsomere combined.

**MALE.** Resembling the female in coloration, structure, chaetotaxy, sculpture and habitus, but differing in the following characters: length 0.58–0.68 mm; antennal scape (fig. 2) thicker, less than 3 times longer than wide ( $2\frac{1}{8}$ – $2\frac{1}{4}$ , radicle excluded); club about twice longer than wide, bearing 2–3 longitudinal sensilla. Gastral sternites reticulated.

Genitalia (fig. 6) with thin, well-developed paramere bearing a single small seta at distal end, sub-equal in length to volsella; digitus bearing 2 apical spines; aedeagus when everted 3 times longer than manipulable portion of paramere.

**MATERIAL EXAMINED:** 10 ♀♀ 3 ♂♂ (holotype ♀, allotype ♂ and paratypes), reared by P. DeBach and L. C. Argyriou from *Leucaspis pini* (Hartig) on *Pinus halpensis*, National Garden, Athens, GREECE, February 3, 1963; 18 ♀♀ 12 ♂♂ (paratypes), reared by L. C. Argyriou from *Leucaspis* sp. on *Pinus* sp., Athens, Greece, September 29, 1970; 10 ♀♀, 10 ♂♂ (paratypes), reared by L. C. Argyriou from *Leucaspis* sp. on *Pinus* sp., Athens, Greece, December 15, 1971. The holotype, allotype and several paratypes, mounted in Hoyer's medium, are deposited in the collection of the Division of Biological Control, University of California, Riverside. Paratypes have been assigned to the following institutions: U.S. National Museum of Natural History, Washington, D.C. (♀, ♂ in Canada balsam); Snow Entomological Museum, University of Kansas, Lawrence (♀, ♂ in Canada balsam); Plant Protection Research Institute, Pretoria, Republic of

South Africa (♀, ♂ in Hoyer's medium); British Museum (Natural History), London (♀, ♂ in Canada balsam); Zoological Institute, Soviet Academy of Science, Leningrad (♀, ♂ in Canada balsam); Faculty of Agriculture, The Hebrew University, Rehovot, Israel (♀, ♂ in Hoyer's medium).

At hand is a slide-mounted ♂ from the Harold Compere collection of Aphelinidae which bears the inscription "A 479 2/15/49 France." This male differs only in the number of setae on the scutellum and other minor features from *D. pini* and hence is considered congeneric with *Debachiella*. The slide was in a cabinet drawer labelled "*Centrodora*", in which all other material was clearly assignable to *Centrodora*. The bulk of the A 479 material had been slide-mounted and was identified by H. Compere as *Physcus testaceus* Masi. Further examination of Compere's material failed to reveal any additional specimens of *Debachiella*.

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